

Claims

What is claimed is:

1. An electro-optical hand-held distance measuring instrument with a housing (2) that can be held in the hand and with an electro-optical distance measurement module (3) with an electric beam source (5) for generating an optical measurement beam (S), a beam receiver (8) for receiving portions of the measurement beam (S) that are backscattered by an object to be measured (MO), and an output device (7) for the determined distance (X), wherein a mechanical distance measuring device (9, 11) is connected to the housing (2).
2. The hand-held distance measuring instrument of claim 1, wherein a connection element (19) is provided that forms a manually detachable interface to the mechanical distance measuring device (9, 11).
3. The hand-held distance measuring instrument of claim 1, further comprising an externally accessible operator control (8) for activating the optical measurement beam (S) and triggering the optical distance measurement process.
4. The hand-held distance measuring instrument of claim 1, wherein the electro-optical distance measurement module (3) has a computing device (4) with additional calculation functions including the addition of distances.
5. The hand-held distance measuring instrument of claim 1, wherein the electro-optical distance measurement module (3) has a common first reference point (10a) for measuring the distance (X) with the mechanical distance measuring device (9, 11) and with the optical measurement beam (S).
6. The hand-held distance measuring instrument of claim 1, wherein the electro-optical distance measurement module (3) has a control device (13) that is connected with the mechanical distance measuring device (9, 11) and that is connected to the electro-optical distance measurement module (3) in a controllable manner.

7. The hand-held distance measuring instrument of claim 6, wherein the control device (13) is constructed as at least one contactless sensor that senses the position of the mechanical distance measuring device (9, 11) relative to the housing (2) and that is sensitive to one of a permanent magnet and a transparent hole (14) arranged in the mechanical distance measuring device (9, 11).

8. The hand-held distance measuring instrument of claim 6, wherein the end of the mechanical distance measuring device (9, 11) whose length is changeable with respect to the housing (2) constitutes a second reference point (10b) whose reference distance (R) to the first reference point (10a) can be detected by the computing device (4) by the control device (13).

9. The hand-held distance measuring instrument of claim 8, wherein the distance (X) determined by the computing device (4) is dependent on the reference distance (R).

10. The hand-held distance measuring instrument of claim 6, wherein the control device (13) is connected to a switching device (15) for a current-carrying connection of the electro-optical distance measurement module (3) to a power supply (16), wherein the switching device (15) is closed to conduct current exclusively when the mechanical distance measuring device (9, 11) is in a position relative to the housing (2) that is necessary for mechanical distance measurement.

11. The hand-held distance measuring instrument of claim 1, wherein the mechanical distance measuring device is a measuring tape (9) such as a self-stiffening, spring pretensioned steel measuring tape.

12. The hand-held distance measuring instrument of claim 1, wherein the mechanical distance measuring device is a folding rule (11).

13. The hand-held distance measuring instrument of claim 12, wherein the folding rule (11) has between 5 and 15 rotationally swivelable members (17) with a length (L) between 10 cm and 30 cm.

14. The hand-held distance measuring instrument of claim 3, wherein the externally accessible operator control (8) is a press button.

15. The hand-held distance measuring instrument of claim 4, wherein the additional calculation functions further include at least one of the subtraction of distances and the calculation of surfaces and volumes.

16. The hand-held distance measuring instrument of claim 7, wherein the at least one contactless sensor is one of a Hall sensor and a photodetector.